

# ASK the Expert

## Premedication for radiocontrast media

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Q:

Could you please give your recommendations on premedicating patients with iodinated contrast dye allergies and would you premedicate when using an alternative dye, such as gadolinium? We are having the debate at our surgery center.

A:

Thank you for your recent inquiry.

There are a number of well accepted protocols to prevent reactions in patients who need to receive iodinated radiocontrast material who have had previous reactions. Copied below are two abstracts that have looked at these protocols. The one which we standardly employ at this time is:

Prednisone 50 mg by mouth 13, 7, and 1 hour before the procedure

Diphenhydramine 50 mg intramuscularly 1 hour before the procedure

You may add ephedrine 25 mg by mouth 1 hour before the procedure as well

These protocols have been studied only for iodinated radiocontrast material. To my knowledge there is no cross reactivity between gadolinium and classical iodinated contrast material in that patients who have to have a gadolinium scan do not need to be pretreated if they have experienced a reaction to iodinated radiocontrast. Studies regarding reactions to gadolinium are more limited, however. If one needs to have a gadolinium scan and has had an anaphylactic reaction to a previous gadolinium scan, then you could consider the pretreatment regimen used for iodinated radiocontrast. However, to my knowledge there are very little data studying its effectiveness in this regard.

Thank you again for your inquiry and we hope this response is helpful to you.

Ann Allergy. 1991 Jul;67(1):70-4.

Comparison of three pretreatment protocols to prevent anaphylactoid reactions to radiocontrast media.

Marshall GD Jr, Lieberman PL.

Source

Division of Allergy-Immunology, University of Tennessee School of Medicine, Memphis.

Abstract

Three pretreatment regimens were compared for prevention of anaphylactoid reactions in 149 patients who previously had reacted to radiocontrast media (RCM) administration. From 1976 to 1980, 52 patients were treated with 50 mg of oral prednisone 13, 7, and 1 hour before and 50 mg intramuscular diphenhydramine 1 hour before procedures (group I). From 1980 to 1984, 48 patients received 300 mg oral cimetidine one hour before procedure in addition to the other regimen (group II). From 1984 to 1989, 49 patients received the three drugs and 25 mg oral ephedrine one hour before procedures (group III). Previous reactions were similar in each group, consisting of urticaria and/or angioedema in all patients, hypotension in some (groups I, 5; II, 6; III, 4), and wheezing in two (group I). Readministration of RCM was intraarterial (groups I, 18; II, 20; III, 20) or intravenous. Generalized reactions upon readministration of RCM occurred in 4 (8%) of group I and 3 (6%) of both groups II and III. All reactions consisted of urticaria and/or angioedema, were mild, and required no specific treatment. In a separate group of ten patients whose previous reactions to RCM were life threatening (shock), pretreatment was accompanied by a provocative dosing regimen. Two patients (20%) experienced systemic reactions that resulted in termination of the procedure. All our pretreatment regimens were equally effective; however, we favor a more comprehensive pretreatment protocol (regimen III) based upon our lack of demonstrated adverse effects and a possible therapeutic advantage as reported by other investigators.

J Allergy Clin Immunol. 1984 Oct;74(4 Pt 1):540-3.

Two pretreatment regimens for high-risk patients receiving radiographic contrast media. Greenberger PA, Patterson R, Radin RC.

#### Abstract

The risk of anaphylactoid reaction (AR) developing from radiographic contrast media in patients who previously have had an AR to radiographic contrast media ranges from 17% to 60%. Pretreatment with prednisone plus diphenhydramine or prednisone and diphenhydramine plus ephedrine decreased the reaction rate to 9.0% and 3.1%, respectively, during 657 procedures in 563 patients. No deaths occurred, and only three episodes of transient hypotension developed, one of which was treated with epinephrine. Pretreatment consisted of prednisone, 50 mg, 13 hr, 7 hr, and 1 hr before the procedure and diphenhydramine, 50 mg, 1 hr and or ephedrine, 25 mg, 1 hr before the procedure. The addition of ephedrine provided a statistically significant reduction in reaction in 192 procedures ( $\chi^2 = 5.4996$ ,  $p = 0.019$ ). In 138 procedures in patients whose initial AR was considered serious, pretreatment was as effective as for patients with histories of mild to moderate reactions. Emergency equipment should be available for all procedures.

Sincerely,  
Phil Lieberman, M.D.

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